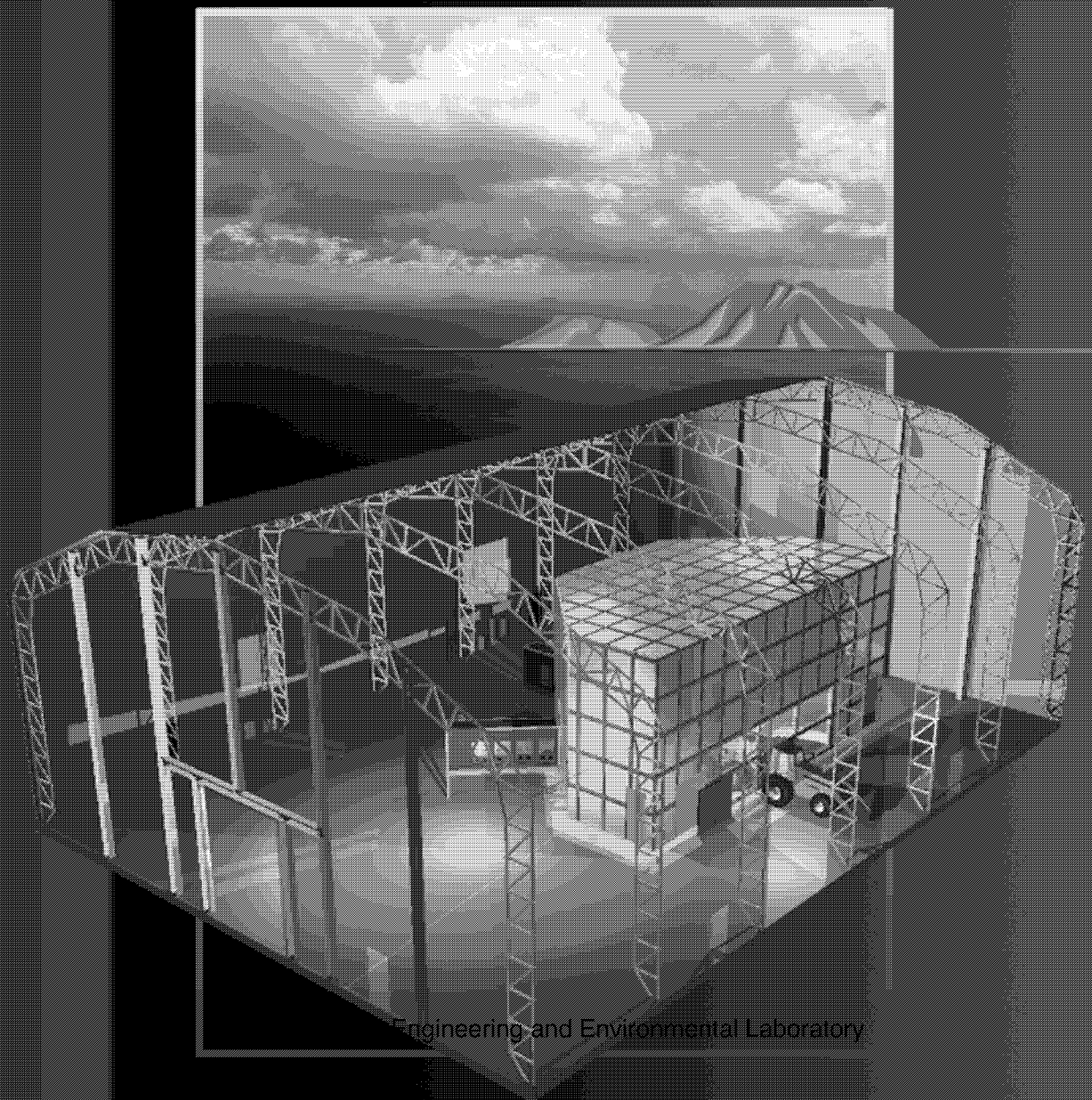
INEEL/EXT-01-01513

OU 7-10 Glovebox Excavator Method Project

Preliminary Project Execution Plan

January 2002



Engineering and Environmental Laboratory

INEEL/EXT-01-01513
PLN-1016

OU 7-10 Glovebox Excavator Method Project
Preliminary Project Execution Plan

January 2002

Idaho National Engineering and Environmental Laboratory
Idaho Falls, Idaho 83415

Prepared for the
U.S. Department of Energy
Assistant Secretary for Environmental Management
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OU 7-10 Glovebox Excavator Method Project

Preliminary Project Execution Plan

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January 2002

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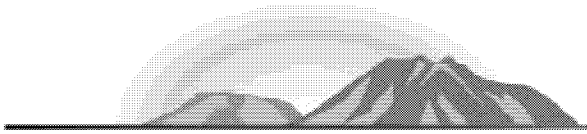
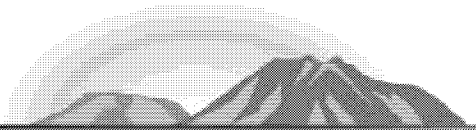


ABSTRACT

This plan describes how the Idaho National Engineering and Environmental Laboratory will conduct the Glovebox Excavator Method Project. The U.S. Department of Energy chose this project to retrieve, characterize, and store transuranic waste on an interim basis at the national laboratory. The Glovebox Excavator Method Project consists of a commercial excavator that removes waste inside a confinement structure, and of gloveboxes, connected to the confinement structure, where personnel can safely inspect, characterize, and package excavated material. This method will cut more than 5 years from the original Stage II remediation schedule and 37% from the original Stage II cost, while at the same time ensuring safety for workers and the environment. This plan establishes the organizations, systems, and processes for managing the project, including technical, cost, and schedule baselines. The plan establishes agreement between the Department of Energy Idaho Operations Office and Bechtel BWXT Idaho, LLC, operator of the laboratory, on work deliverables, management processes, project reporting, and performance expectations.

This preliminary Project Execution Plan (PEP) supports Critical Decision (CD)-1 approval and establishes the baseline for design activities, and a preliminary baseline range for the remainder of the project. This preliminary PEP will be developed into a final PEP at CD-2/3, when a final performance baseline will be established.



EXECUTIVE SUMMARY

This Project Execution Plan describes how the Idaho National Engineering and Environmental Laboratory (INEEL) will conduct the Glovebox Excavator Method Project. The U.S. Department of Energy (DOE) chose this project to demonstrate retrieval, characterization, and interim storage of transuranic (TRU) waste from Operable Unit (OU) 7-10 at the INEEL. The plan establishes the organizations, systems, and processes for managing the project, including technical, cost, and schedule baselines. The project expects to complete the retrieval demonstration task in late 2004.

The Glovebox Excavator Method Project represents a significant improvement over the original Stage II 90% schedule, which was initially prepared to demonstrate retrieval of TRU waste from a selected area of OU 7-10. The new method will cut more than 5 years from the Stage II remediation schedule and 37% from the Stage II remediation cost, while at the same time ensuring worker and environmental safety. The project has been developed to a conceptual level of maturity, and risks are identified with mitigation plans in place.

The project achieves DOE's 1993 Record of Decision (ROD) objectives, as modified, by demonstrating retrieval of TRU waste. Information and experience obtained from the demonstration retrieval can be used to support the overall activities to remediate TRU waste buried at the INEEL's Waste Area Group (WAG) 7.

The TRU waste at the INEEL stems from the production of nuclear weapons materials during the Cold War at DOE's Rocky Flats Plant northwest of Denver. Rocky Flats sent this waste to the INEEL.

OU 7-10 is a 1-acre area within the 96.8 acres of pits and trenches that compose WAG 7 at the INEEL.

The Glovebox Excavator Method Project's retrieval system consists of a fabric weather enclosure structure, steel confinement structure, excavator, ventilation system, and other supporting equipment. Overburden is removed to a specified depth, then the excavator arm, contained within a confinement structure, excavates a semicircular swath of waste zone material. The retrieved waste zone material is placed in a transfer cart by the excavator bucket. One transfer cart is located at the entrance of each of three material-packaging gloveboxes.

The carts transport waste zone materials inside the gloveboxes, where the material is inspected, categorized, and sampled. Each of the three gloveboxes is equipped with three drum bagout stations for packaging the material into 55-gal and 85-gal drums.

After waste excavation is complete, a sampling device attached to the excavator arm takes core samples of the underburden. When sampling is

completed, overburden is placed back into the excavation, filling approximately half the excavated volume. Then a low-strength grout mixture is pumped onto the overburden fill. Deactivation, decontamination, and dismantlement activities will follow completion of excavation backfill activities.

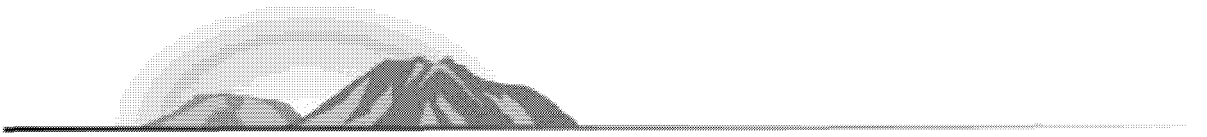
General steps of the project include engineering, construction, construction management, procurement, startup, operations, and closure. The project team consists of approximately 100 people, including project managers, construction managers, cost and schedule engineers, administrators, procurement representatives, design engineers, operators, and laborers. The cost of the project is estimated at $77.5 million.

This plan establishes agreement between the DOE Idaho Operations Office and Bechtel BWXT Idaho, LLC, operator of the INEEL, on work deliverables, management processes, project reporting, and performance expectations. It also establishes the agreement between the project and other stakeholders on roles and responsibilities and interface management.

The project's "Technical and Functional Requirements Document" sets the technical baseline for the project. Baseline requirements help control risks of delays, cost overruns, and safety infractions.

The schedule for the project calls for the demonstration task to be completed by late 2004, with authorization to proceed from conceptual design by the end of February 2002, critical decisions for procurement and construction by the end of August 2002, completion of design by the end of October 2002, commencement of construction by the end of November 2002, authorization to proceed with operations by the end of February 2004, and commencement of excavation by the end of March 2004.

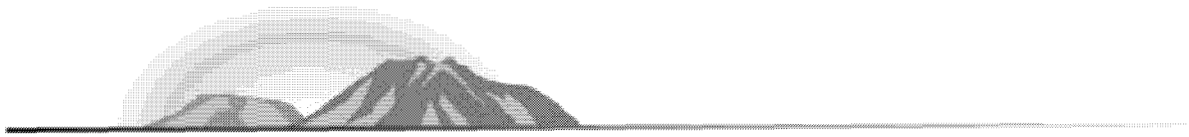
In addition to engineering and operations, management of the project includes oversight of records, configuration, quality, safety, and security.



CONTENTS

FIGURES

TABLES



ACRONYMS

AE	acquisition executive
AE	architectural engineering
AFC	Approved for Construction
ALARA	as low as reasonably achievable
AM EM	assistant manager for environmental management
AMWTF	Advanced Mixed Waste Treatment Facility
AMWTP	Advanced Mixed Waste Treatment Project
ANSI/EIA	American National Standards Institute/Electronic Industries Association
AR	administrative record
AR/IR	Administrative Record and Information Repository
ARAR	applicable or relevant and appropriate requirement
ASA	auditable safety analysis
ASME	American Society of Mechanical Engineers
BBWI	Bechtel BWXT Idaho, LLC
BCP	baseline change proposal
BNFL	British Nuclear Fuels plc
BWXT	BWX Technologies, Inc.
CAS	Criticality Alarm System
CC	construction coordinator
CCR	competency commensurate with responsibility
CCTV	closed-circuit television
CD	critical decision
CDR	Conceptual Design Report
CERCLA	Comprehensive Environmental, Response, Compensation, and Liability Act
CFO	chief financial officer
CFR	Code of Federal Regulations

CLP	Contract Laboratory Program
CM	configuration management
COTR	contracting officer's technical representative
CSE	criticality safety evaluation
DCN	design change notice
DD&D	deactivation, decontamination, and dismantlement
DMCS	Document Management Control System
DOE	Department of Energy
DOE-HQ	U.S. Department of Energy Headquarters
DOE-ID	U.S. Department of Energy Idaho Operations Office
DWP	Detailed Work Plan
EAC	estimates at completion
ECF	engineering change form
EDF	engineering design file
EDM/OIS	Electronic Document Management/Optical Imaging System
EDMS	Electronic Document Management System
EM	environmental management
EMR	experience modification rate
EPA	U.S. Environmental Protection Agency
ER	environmental restoration
ES&H	environment, safety, and health
ESAAB	Energy Systems Acquisition Advisory Board
ESD	explanation of significant differences
ESH&QA	Environment, Safety, Health, and Quality Assurance
EXT	external
FCN	field change notice
FDSA	final documented safety analysis
FE	field engineer

FFA/CO	Federal Facility Agreement and Consent Order
FFS	Facility Floor Structure
FHA	fire hazards analysis
F&OR	functional and operational requirements
FMM	Fissile Material Monitor
FPE	fire protection engineer
FPM	federal program manager
FSA	final safety assessment
FSP	field sampling plan
FY	fiscal year
GDE	guide
GFE	government-furnished equipment
GIS	Geographical Information System
HEPA	high-efficiency particulate air
HQ	headquarters
HVAC	heating, ventilating, and air conditioning
IAG	interface agreement
ICARE	Issue Communication and Resolution Environment
IDEQ	Idaho Department of Environmental Quality
INEEL	Idaho National Engineering and Environmental Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
IPS	integrated planning system
IPT	integrated project team
ISMS	Integrated Safety Management System
JSA	job safety analysis
LLC	Limited Liability Company
LMAES	Lockheed Martin Advanced Environmental Systems
LO/TO	lockout/tagout

LST	list
MCP	management control procedure
MEL	master equipment list
MLLW	mixed low-level waste
MSA	management self assessment
MSDS	material safety data sheet
MTEP	master test and evaluation plan
NEPA	National Environmental Policy Act
O&M	operations and maintenance
OECM	Office of Engineering and Construction Management
ORD	operations requirements document
ORR	operational readiness review
OSHA	Occupational Safety and Health Administration
OU	Operable Unit
PBS	project baseline summary
PC	performance category
PCB	polychlorinated biphenyl
PDRI	project definition rating index
PDSA	preliminary documented safety analysis
PEP	Project Execution Plan
PFD	process flow diagrams
PGS	packaging glovebox system
P&ID	piping and instrumentation diagrams
PLN	plan
PM/PA	program management/project administration
POD	plan of the day
PRD	program requirements document
PSO	program secretarial officer

QA	quality assurance
QAPjP	quality assurance project plan
QE	quality engineer
QI	quality inspector
QPP	Quality Program Plan
R&D	research and development
R2A2	roles, responsibilities, accountabilities, and authority
Rad-Con	radiological control
RAM	responsibility assignment matrix
RCS	Retrieval Confinement Structure
RD/RA	remedial design/remedial action
ROD	Record of Decision
RWMC	Radioactive Waste Management Complex
SAE	secretarial acquisition executive
SAP	sampling and analysis plan
SAR	safety analysis report
SDA	Subsurface Disposal Area
SDC	system design criteria
S&M	surveillance and maintenance
SME	subject-matter expert
SNFDSP	Spent Nuclear Fuel Dry Storage Project
SO	system operability
SOW	scope of work
SRM	Subcontractor Requirements Manual
SSC	structures, systems, and component
STD	standard
STR	subcontract technical representative
S/U	startup and testing

TEM	template
T&FR	technical and functional requirement
TPC	total project cost
TRAIN	Training Records and Information Network
TRU	transuranic
TSR	Technical Safety Requirements
USC	United States Code
USQ	unreviewed safety question
VP	vice president
VPP	Voluntary Protection Program
V&V	validation and verification
WAG	Waste Area Group
WBS	work breakdown structure
WDC	work discipline code
WES	Weather Enclosure Structure
WIPP	Waste Isolation Pilot Plant
WPM	Work Package Manager

1. INTRODUCTION

This preliminary Project Execution Plan (PEP) provides the fundamental guidelines and expectations of the Operable Unit (OU) 7-10 Glovebox Excavator Method Project for detailed engineering, construction, procurement, startup, operations, and closure. The objectives of the document are to:

Glovebox Excavator Method Project

- Implements clearly defined execution strategies and work processes to achieve successful project completion.

- Communicate the overall project execution strategy
- Define each key element of the project execution
- Define the roles and responsibilities of the project team and between the project team and other project stakeholders
- Include the principal elements of the project acquisition strategy and plan
- Outline the project management process for U.S. Department of Energy (DOE) Order 413.3 compliance
- Provide guidelines to ensure consistency and compatibility for all planning aspects of the project.

An additional purpose of this PEP is to establish agreement between the DOE Idaho Operations Office (DOE-ID) and Bechtel BWXT Idaho, LLC (BBWI), operator of the Idaho National Engineering and Environmental Laboratory (INEEL), on the work-scope deliverables, agreed-upon project management and control processes, reporting, and performance expectations for the Glovebox Excavator Method Project. The final PEP will establish the project performance baseline including the technical scope, cost, and schedule.

1.1 Background

Documentation of OU 7-10 has been extensive. A Record of Decision (ROD), two Explanation of Significant Differences (ESDs) documents, a remediation subcontractor termination, and an 18,000-page remedial design/remedial action (RD/RA) work plan with a 90% design submittal have been completed in association with OU 7-10. Following is an overview of OU 7-10 history that identifies the purposes and major changes of these pertinent documents.

The INEEL actively placed Rocky Flats Plant and INEEL waste material in OU 7-10 from 1967 until the operable unit was closed in 1969. In 1989, the INEEL was placed on the National Priorities List, and the Federal Facility Agreement and Consent Order (FFA/CO) of 1991 specifically identified OU 7-10 for an interim action.

In 1993, an interim ROD was signed. The associated Scope of Work (SOW) documented the schedule and approach for ROD implementation, and DOE's operating contractor subcontracted with Lockheed Martin Advanced Environmental Systems (LMAES) to perform the SOW.

The INEEL revised the SOW in 1995 to address details for design, construction, and operation approaches. This resulted in significant changes in the ROD cost estimates, which, in turn, required the issuance of an ESD in 1995.

DOE prepared a contingency plan to accommodate the possibility that LMAES might not fulfill the terms of the SOW. This contingency plan developed into the staged interim action approach formalized in the revised SOW (Rev. 2) issued in 1997. Revision 2 of the SOW identified performance objectives, milestones, and deliverables in the event that the LMAES SOW was not completed. The LMAES contract was subsequently terminated, and the INEEL began work on the Staged Interim Action Project.

The 1998 ESD to the interim ROD, which launched the Staged Interim Action Project, also formalized the adoption of the three-stage (I, II, and III) approach to satisfy the requirements of the interim ROD, its two associated ESDs, and the SOW. Also in 1998, the Systems Requirements Document and the Stage II Technical and Functional Requirements Document identified the project requirements and traced them to the OU 7-10 interim ROD, ESDs, and SOW.

The three stages of the Staged Interim Action Project were to be as follows: Stage I involved subsurface exploration of OU 7-10 to support siting of Stage II. Stage II involved the retrieval of a select area of OU 7-10 including a waste retrieval demonstration, characterization of waste zone material and soils, and storage of retrieved waste zone material. Stage II also included design and construction; excavation and retrieval; and sampling, packaging, and storage of materials. Stage III was for the overall remediation of OU 7-10 using information from Stage II.

The requirements applying to all three stages of the OU 7-10 Staged Interim Action Project are identified in the systems requirement document, while the Stage II technical and functional requirements document defines the Stage II scope and activities. Following the formal review and acceptance of both documents, the Stage II Technical and Functional Requirements Document became the technical baseline, which was used to develop the conceptual (10%), Title I (30%), and Title II (90%) designs. The Title II design for Stage II was submitted on June 30, 2000, as part of the RD/RA work plan.

While the Stage II design met all technical requirements, the associated project schedule did not meet the enforceable deadline for completion of the remedial action report. DOE requested a schedule extension that was denied by the State of Idaho and resulted in a formal dispute. As part of the dispute resolution process, alternate concepts to demonstrate retrieval were developed that reduced the schedule. The concept selected was the Glovebox Excavator Method.

1.2 References

MCP references are generic in nature in CD-1. In the execution phase we will only call out MCPs and MCP sections that are applicable to the project.

54 FR 48184, November 21, 1989, *Federal Register*, "National Priorities List of Uncontrolled Hazardous Waste Sites; Final Rule,"1993 Record of Decision.

DOE-ID, 2000, *Draft Operable Unit 7-10 (OU 7-10) Staged Interim Action Project, Stage II, RD/RA Work Plan Primary Deliverable Submittal*, DOE/ID-10767.

DOE-ID, 1998, *Explanation of Significant Differences for the Pit 9 Interim Action Record of Decision at the Radioactive Waste Management Complex at the Idaho National Engineering and Environmental Laboratory.*

DOE-ID, 1995, *Explanation of Significant Differences for the Pit 9 Interim Action Record of Decision at the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory.*

DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory.*

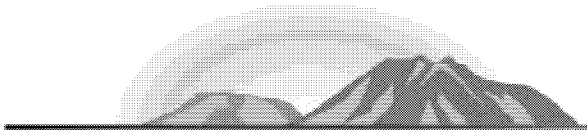
EG&G, 1993, *Remedial Design/Remedial Action Scope of Work and Remedial Design Work Plan: Operable Unit OU 7-10 (Pit 9 Project Interim Action)*, EGG-ER-11055.

INEEL, 2001, *Technical and Functional Requirements for the Operable Unit 7-10 Glovebox Excavator Method Project*, INEEL/EXT-1998-00444, TFR-2527.

INEEL, 2001, *Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications*, INEEL/EXT-01-01105.

LMITCO, 1997, *Remedial Design/Remedial Action Scope of Work and Remedial Design Work Plan: Operable Unit OU 7-10 (Pit 9 Project Interim Action)*, INEL-94/0110.

LMITCO, 1998, *OU 7-10 RD/RA Contingency Program System Requirements Document*, INEEL/EXT-98-00310.



2. MISSION NEED

2.1 Project Objectives

On October 1, 2001, the INEEL published the *Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications* report that identifies a feasible approach for retrieving a small amount of waste zone material from OU 7-10. Establishing the Glovebox Excavator Method Project accomplishes the objectives presented in that report and fulfills the requests of DOE-ID as found in the *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory*, the Pit 9 Record of Decision, the 1998 Explanation of Significant Differences, and Appendix A of the RD/RA SOW and Work Plan. The overall objectives for the project are as follows:

- Demonstrate waste zone material retrieval
- Provide information on any contaminants of concern present in the underburden
- Characterize waste zone material for safe and compliant storage
- Package waste zone material in containers acceptable at the Advanced Mixed Waste Treatment Facility (AMWTF).

2.2 Project Constraints and Assumptions

Appendix A summarizes the constraints and assumptions that have been used in developing the project scope of effort, work plan, cost estimate, and schedule. These constraints and assumptions are organized into the following sections: scope, cost, and schedule. The project work plan, cost estimate, and schedule are not valid if these constraints and assumptions are not fulfilled.

The following major items are excluded from the scope of the project, its estimated costs, and associated contingency:

- *Outlier Materials*. Retrieval, characterization, packaging, interim storage or disposal of any waste material (i.e., an outlier) that is not included in the documented safety basis is excluded work scope. Specifically, work associated with the evaluation and processing of a waste item through the Unreviewed Safety Question process that results in a revision to the safety basis is excluded scope. Outlier materials are assumed to include classified objects. Excavated materials may be returned to the pit after evaluation in the glovebox and determined to be outliers.
- *Waste Acceptance Criteria.* The project design and waste sampling plan are based on meeting AMWTF waste acceptance criteria, and do not include meeting Waste Isolation Pilot Plant (WIPP) review and validation requirements. Data review and validation includes technical and QA reviews that are required to be performed by the analytical facility to verify their analytical methods, and do not include WIPP review and validation.
- *DOE Order 413.3, Critical Decisions and Enforceable Milestones.* Assume that critical decisions based on DOE Order 413.3 are made at the DOE field office level and not elevated to DOE-HQ. Assume that the Critical Decision (CD) Partial 3a, Partial 3b, and 2/3 are completed to allow multiple procurement and construction packages to be issued to support a fast-track project schedule which permits erection of the weather enclosure structure prior to the onset of inclement

weather in the fall of calendar year 2002. Assume that the technical, cost, and schedule baselines are set at the completion of CD 2/3 in accordance with DOE Order 413.3.

These items are also included in Appendix A.

2.3 References

MCP references are generic in nature in CD-1. In the execution phase we will only call out MCPs and MCP sections that are applicable to the project.

DOE-ID, 1991, *Federal Facility Agreement and Consent Order for the Idaho National Engineering Laboratory.*

DOE-ID, 1993, *Record of Decision: Declaration of Pit 9 at the Radioactive Waste Management Complex Subsurface Disposal Area at the Idaho National Engineering Laboratory, Idaho Falls, Idaho.*

DOE-ID, 1995, *Explanation of Significant Differences for the Pit 9 Interim Action Record of Decision at the Radioactive Waste Management Complex at the Idaho National Engineering Laboratory*, U.S. Department of Energy, Idaho Field Office; U.S. Environmental Protection Agency, Region 10; Idaho Department of Health and Welfare.

DOE-ID, 1998, *Explanation of Significant Differences for the Pit 9 Interim Action Record of Decision at the Radioactive Waste Management Complex at the Idaho National Engineering and Environmental Laboratory.*

DOE-ID, 2000, *Remedial Design/Remedial Action Work Plan for Stage II of the Operable Unit 7-10 (OU 7-10) Staged Interim Action Project* (Draft)," DOE/ID-10795.

INEEL, 2001, *Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications*, INEEL/EXT-01-01105.

3. PROJECT DESCRIPTION

3.1 General Description

The INEEL is a DOE facility, located 32 miles west of Idaho Falls, Idaho, and occupies 890 mi^2 of the northeastern portion of the Eastern Snake River Plain. The Radioactive Waste Management Complex (RWMC) is located in the southwestern portion of the INEEL. The Subsurface Disposal Area (SDA) is a 96.8-acre area located within the RWMC. Waste Area Group (WAG) 7, the designation recognized by Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and used in the FFA/CO for the RWMC, encompasses the SDA buried waste site. WAG 7 has been subdivided into 14 Operable Units (OUs). Pit 9, designated OU 7-10, is located in the northeast corner of the SDA. The Pit 9 site is an area into which chemicals, radioactive materials, and sludge from DOE weapons plants and other government programs were disposed. While such disposal at the RWMC began in 1952, Pit 9 was used and filled in the late 1960s. The pit contains characteristic hazardous, listed hazardous, low-level radioactive, and transuranic (TRU) waste.

Glovebox Excavator Method Project General Description

Incorporates a three-phase approach (planning, execution, and mission) to:

- Excavate and retrieve waste zone material
- Sample, package, and store waste zone material
- Monitor the work area
- Conduct work safely and securely

The Glovebox Excavator Method Project facilities and processes will be designed to safely conduct a waste zone material retrieval demonstration in a selected area of Pit 9. The facilities for the project will be located in the selected area of Pit 9 and include a Retrieval Confinement Structure (RCS), a Weather Enclosure Structure (WES), and an interim storage area. The project processes consist of excavation and retrieval; sampling, packaging, and interim storage; utilities; safeguards and security; and environmental monitoring. The retrieval system consists of an excavator, ventilation system, and other supporting equipment operating inside of the WES and RCS. The packaging glovebox system (PGS) consists of three gloveboxes in which operators examine materials, take samples, and package waste zone material. The storage system includes an interim storage area for packaged materials without PCB (polychlorinated biphenyl) contamination, and cargo containers for PCB-contaminated waste zone material. Facility deactivation, decontamination, and dismantlement (DD&D) is included in the scope.

3.2 Project Life Cycle and Critical Decisions

Planning and executing project activities is done in accordance with the guidelines provided in DOE Order 413.3, "Program and Project Management for the Acquisition of Capital Assets," as specified for an environmental restoration project. Environmental restoration projects are driven by regulatory requirements in CERCLA that specify statutory time limits, potential fines, and documentation requirements. To accomplish the project goals in accordance with the regulatory milestones, the project team proposes a unique series of critical decisions (CDs) based on the guidance provided in DOE Order 413.3. The proposed CDs are shown in Table 3-1 and are discussed as a function of the project phase in the following paragraphs.

Table 3-1. Planned Critical Decisions for project.

Project Phase	Sub Task	Critical Decision	Status
Planning	Preconceptual Planning	Approve Mission Need – CD-0	Completed October 12, 2001 – Conceptual Design Authorized
	Conceptual Design	Approve Preliminary Baseline Range—CD-1	Planned for January 2002
Execution	Utilities and Site Preparation	Approve Performance and Start of Field Work/Construction—Partial CD-3a	Planned for April 2002
	Structural	Approve Start of Field Work/Construction—Partial CD-3b	Planned for May 2002
	Mechanical, Electrical & Equipment	Approve Performance Baseline and Start of Field Work/Construction—CD-2/3	Planned for August 2002
Mission	Operations	Start of Operations or Project Closeout—CD-4	Planned for January 2004

3.2.1 Planning Phase

The goal of the planning phase is to develop a general need into a viable scope, schedule, and sufficient cost information to support the decision process for authorizing subsequent activities. Two activities comprise the project planning phase for environmental restoration projects. Preconceptual planning leads to approval of mission need (CD-0) and authorizes development of the conceptual design. Conceptual design activities lead to approval of the preliminary baseline range (CD-1) and authorization to initiate title design.

- Approval of Mission Need (CD-0): Preconceptual planning was accomplished with acceptance of the glovebox excavator method recommendation defined in the *Waste Area Group 7 Analysis of OU7-10 Stage II Modifications* report. This report evaluated five options to complete the primary Stage II objectives under an accelerated schedule, and recommended the glovebox excavator method as the best option. CD-0 was achieved on October 12, 2001 with the approval of a baseline change proposal to fund conceptual design activities.

- Approval of Preliminary Baseline Range (CD-1): The second subphase of planning is the conceptual design and preparation of supporting safety related documents. At the completion of these activities, a conceptual design report, preliminary PEP, project definition rating index (PDRI) evaluation, and draft preliminary documented safety analysis (PDSA) will document the baseline range (preliminary scope, schedule and cost estimates for the project). These documents will provide the basis for approval of CD-1 and authorization to proceed with detailed design activities.

3.2.2 Execution Phase

In the execution phase, the conceptual designs are further defined and developed into engineering design documents that are used to procure components, fabricate subsystems, and construct facilities. For environmental restoration projects, CD-2 (Approve Performance Baseline) and CD-3 (Approve Start of Field Work/Construction) are combined into a single decision point. At the completion of detailed engineering and other activities as authorized at CD-1, a final design report, updated project execution plan, updated PDRI evaluation, and approved preliminary documented safety analysis will document the baseline range (scope, schedule, and cost estimates) for the project.

It is proposed for this project that two partial CD-3 determinations (CD-3a and CD-3b) will be completed prior to the CD 2/3 to allow early initiation of "low-risk" construction work and selected long-lead procurement activities.

- Partial CD-3a—Site Utilities and Preparation: This CD will approve design disclosure documents associated with the site preparation including temporary access ramps, roads and a waste zone material storage pad and utilities including electrical power.

- Partial CD-3b—Structural: This CD will approve the design disclosure documents associated with long-lead procurements and installation of structural components and systems in Pit 9. The PDSA will be submitted for approval and the DOE Evaluation Report will be issued prior to approval of this CD.

- CD-2/3—Approve Performance Baseline and Approve Start of Field Work/Construction: This critical decision will approve the design disclosure documents and procurement and installation of the mechanical, electrical, and instrument and control system. This critical decision will set the project baselines as defined in this Project Execution Plan. An Execution Readiness External Independent Review will be conducted as part of this critical decision process.

3.2.3 Mission Phase

During the mission phase (operations subtask), the facility will undergo the acceptance process prior to turnover for operations. The facility will operate for a time period necessary to accomplish the waste zone material retrieval and sampling mission.

During the mission phase, one CD event occurs; the approval for start of operations or project closeout (CD-4). The prerequisites for CD-4 include: construction completed, final documented safety analysis completed and safety evaluation report issued, and operational readiness reviews successfully conducted. Authorization for facility decontamination and decommission will be accomplished under a separate process based on the safety analysis documents developed during the operational phase of the project.

3.3 References

MCP references are generic in nature in CD-1. In the execution phase we will only call out MCPs and MCP sections that are applicable to the project.

INEEL, 2001, *Waste Area Group 7 Analysis of OU 7-10 Stage II Modifications*, INEEL/EXT-01-01105.

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